

Group No	Topic	Brief Description	Group Members
1	System Call	Requires you to find out works that explores how the OS handles syscall, optimize syscall processing for faster interaction with the kernel, security of the kernel syscall implementation	20CS10010
			20CS10003
			20CS30063
			20CS10046
2	Synchronization	Requires you to find out works on handling critical sections in the kernel, kernel synchronization primitives, security in kernel synchronization methods	19CS30013
			19CS30037
			19CS30057
3	Device Driver	Requires you to find out works on secure kernel-driver interface, device driver isolation, lightweight device driver, driver fuzzing	20CS30050
			20CS10015
			20CS10028
4	I/O	Requires you to find out works on I/O processing optimization, securing I/O, fast I/O processing	20CS30008
			20CS10029
			20CS30042
			20CS10059
5	Far Memory, Remote Memory	Requires you to find out works that explores far memory handling, efficient access of remote memory, resilient memory access, efficient use and access of far memory	20CS10057
			20CS10037
			20CS30001
			20CS10058
6	Paging	Requires you to find out works on paging optimizations, page replacement algorithms, alternative of paging operations, memory protection during page replacement	20CS10039
			20CS30003
			20CS30016
			20CS10007

7	Virtualization (Virtual Machines)	Requires you to find out works on security and performance of virtualization, reducing virtualization overhead, nested virtualization, implement isolation during virtualization. Focus mainly on VM-based virtualization (not containers)	20CS10067
			20CS30012
			20CS10027
			20CS30057
8	Container Management	Requires you to find out works on container orchestration, usage of containers for OS optimization, large container deployment, cold startup and startup latency reduction in containers	20CS30045
			20CS30030
			20CS10056
			20CS30024
9	File System	Requires you to find out works that explores file system optimizations for Kernels, crash-consistency, file system configurations, persistent memory file systems	20CS10079
			20CS30040
			20CS30051
			20CS30061
10	Programmability, eBPF	Requires you to find out works on supporting OS programmability using eBPF, optimizing storage access using eBPF, fast software packet processing, eXpress Data Paths (XDP)	20CS30029
			20CS30054
			20CS30034
			20CS10082
11	Large Storage systems	Requires you to find out and read some important works dealing with how data is stored and accessed in large systems, for example, storage systems used by Google/Facebook kind of systems, cloud systems etc	20CS10023
			20CS30056
			20CS10009
			20CS30071
12	VM scheduling in Cloud Data Centers	Requires you to look at works related to scheduling algorithms used for scheduling VM's among large no. of servers in a data center	20CS10042
			20CS30062
			20CS30041

13	Networking support in OS	Requires you to look at works related to OS support for networking for different applications	20CS10085
			20CS30065
			20CS10088
			20CS10077
14	Transaction support in OS	Requires you to look at works related to providing database implementation support in OS	22CS60R62
			22CS72P06
			23CS60R32
15	Thread system implementation	Requires you to look at works that deal with efficient implementation and scheduling of threads	22CS72P02
			22CS92P02
			23CS91P01
			23CS91R08